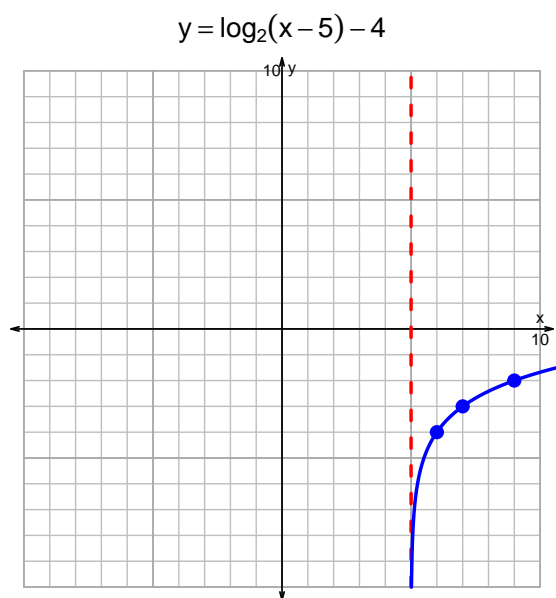
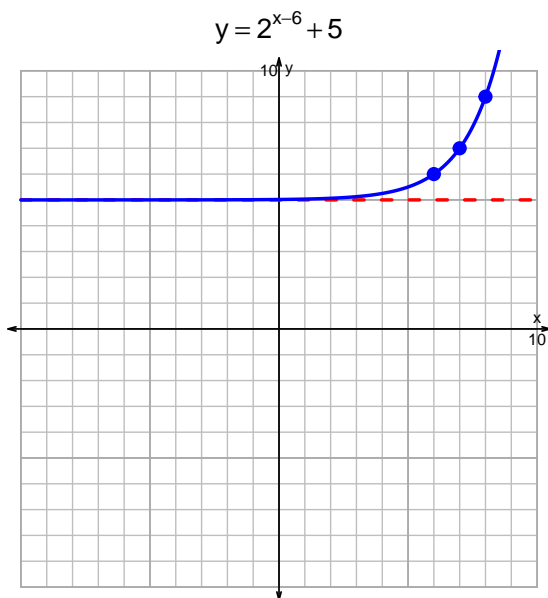


Name: _____

Date: _____

s18QUIZ: EXP LOG (SOLUTION v107)

1. Graph $y = 2^{x-6} + 5$ and $y = \log_2(x - 5) - 4$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-19 = \left(\frac{-4}{7}\right) \cdot 2^{-5t/3}$$

Divide both sides by $\frac{-4}{7}$.

$$\frac{19 \cdot 7}{4} = 2^{-5t/3}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{19 \cdot 7}{4} \right) = \frac{-5t}{3}$$

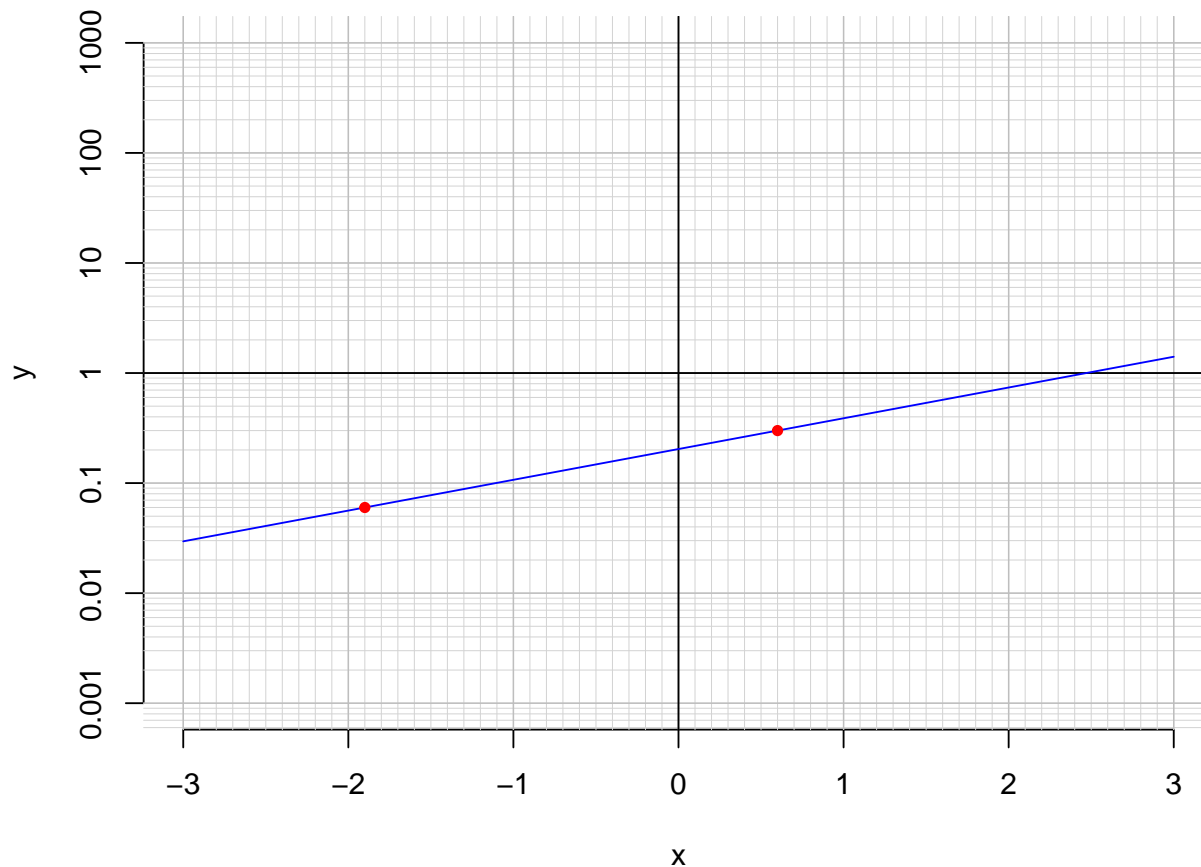
Divide both sides by $\frac{-5}{3}$.

$$\frac{-3}{5} \cdot \log_2 \left(\frac{19 \cdot 7}{4} \right) = t$$

Switch sides.

$$t = \frac{-3}{5} \cdot \log_2 \left(\frac{19 \cdot 7}{4} \right)$$

3. An exponential function $f(x) = 0.204 \cdot e^{0.644x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-1.9)$.

$$f(-1.9) = 0.06$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{1}{0.644} \cdot \ln\left(\frac{x}{0.204}\right)$$

- c. Using the plot above, evaluate $f^{-1}(0.3)$.

$$f^{-1}(0.3) = 0.6$$